ECONOMIC GROWTH IMPACT MODEL FOR RURAL OHIO

A Tool for Measuring the Economic Benefits and Costs of Growth

This factsheet introduces Ohio's Economic Growth Impact Model. This model provides information needed by local leaders that are looking carefully at their economic development programs and their impacts.

The Growth Impact Model estimates the net dollar impact of local policies such as:

1. public investment in industrial site improvements
2. tax abatements for industry
3. promotion campaigns for new industry

The impacts are calculated for the increase in local incomes and changes in tax revenues, state aids, and expenditures for city, county and school districts in which growth occurs. The growth impact model provides city and county officials in rural areas with an inexpensive means of estimating some of the benefits and costs of local growth policies.

Creating New Jobs

The retention and expansion of local industries and the attraction of new jobs to the community are concerns in many parts of rural Ohio. Many communities wish to develop more jobs in what is sometimes called the "export sector." This sector includes the firms which produce goods to be sold outside the community. Manufacturing firms are good examples. This type of firm brings in new income from other regions and results in greater multiplier effects on jobs and incomes in the service sector.

It is increasingly difficult to create manufacturing jobs. This is due not only to the current recession but also to the long term trend in manufacturing jobs. From 1970 to 1978 the annual rate of new manufacturing jobs created was only 32 percent of the annual rate from 1960 to 1969.

As the competition for manufacturing jobs and those in other industries increases, communities are seeking new ways to facilitate the expansion of existing firms and to attract new ones. One popular way of providing assistance in Ohio has been through a new tax abatement program. This allows communities to provide a tax break on real property for new plants or expansion to existing plants for up to 15 years. Other areas have provided help by improving industrial sites and parks.

By George Morse, Resource Economist, Department of Agricultural Economics and Rural Sociology, The Ohio Agricultural Research and Development Center and the Ohio State University, ESO 656, September 1979.

There are differences of opinion on how aggressive communities ought to be in providing assistance to firms. Some argue that if a community makes site improvements or provides tax breaks the additional tax revenues will compensate for these investments. Others feel that the additional public service expenditures for new plants and residents are likely to be too great and that tax rates may rise.

The Economic Growth Impact Model

The Ohio Growth Impact Model estimates the new income staying in the community and county where the new jobs are created. It also estimates the increased income to local merchants and their employees after considering both the multiplier effects and local shopping patterns.

Based on these income changes and information on local government tax rates, user chargers, and service expenditures, the net change in the revenues is estimated. The impacts are estimated separately for the city or village in which the plant locates and the county and the school district. Since the impacts may vary from year to year, estimates are computed for up to 20 years.

The model is designed primarily for small to medium sized cities (population 50,000 and under).

Community Investments in Industrial Sites

Will community investments in industrial sites and parks pay off? Will additional tax revenues be greater than additional public service costs? Or will tax rates be increased? These are common questions when communities consider inducements for encouraging the growth in jobs. The growth impact model answers the types of questions for specific firms.

For example, a recent study for Athens, Ohio estimates that the city's revenues would increase by $13,027 if a fabricated metal firm located there. Expenses were estimated to increase by $9,047, for a net gain of $3,980 in the first year. To estimate how much the city could afford to invest on sites or parks for this plant, the net gains were also estimated for 20 years.

Obviously, the present value of a dollar is less when it is received 10 years from now than when received right now. If the future benefits are discounted at 9 percent, $3,980 received in year 10 is really only worth $1,830 today, or 44 percent of the eventual value. When these discounted values for the next 20 years are added together, this gives the maximum amount the city could afford to invest. In this example, Athens could invest up to $39,680 for the machine tool firm.

The $39,680 is called the breakeven level of investment because if more was invested the costs would exceed the benefits and tax rates would need to go up. But, at or below the breakeven level net revenues (new revenues minus new expenditures) are positive.

Other Local Growth Policies

The model can also be used to study the impacts of two other local growth policies: tax abatement and promotion programs.

The model cannot project whether or not a tax abatement will attract new firms to your community or encourage existing ones to expand. But it can tell you what the impacts are with or without the tax break. Likewise, the model can be used to select industries for promotional programs.

Factors Considered in the Estimates

Similar models have been used in Cooperative Extension Service programs in Indiana, Texas, South Dakota, North Dakota, and Florida, Oklahoma, and Wisconsin. All of these models provide a general representation of the local economy and its linkages to local units of government.

The Ohio model estimates the increased annual labor income in the city or village in which a plant locates or expands. These estimates take into account the income leakages if the positions of some employees shifting to new jobs are left vacant. The impacts on the city's merchants and their employees are estimated considering the multiplier effects and leakages in income due to shopping in other areas. Income impacts are also calculated for employees living in the rest of the county.

Most people hope growth will not increase taxes or reduce the quality of public services. So the tax rates and public service quality are held constant when the model estimates additional revenues and expenditures.

Only the changes due to the new plant are included in the model. For example, state aid to cities and counties change very little due to growth, but it changes considerably for school districts. For schools the amount of state aid depending on the ratio of the number of new students and the value of new property and also the local tax effort.

Since the estimates require 144 pieces of information and a series of lengthy calculations, the model has been computerized. This not only improves accuracy and saves time but also allows local officials to explore the impacts of a range of different policies and situations.

A detailed description of the model and its estimation procedures is available from the author.

How to Use the Model

The Ohio Economic Growth Impact Model is available to public officials and developmental groups through the Ohio Cooperative Extension Service.

Users can select from three levels of complexity:

1. Typical firm
2. Specific firm
3. In-depth case study

The first option only requires a description of the type of industry to be studied and the location of the plant. Published data on the typical firm in this industry and on the community's characteristics are used to estimate the impacts.

Six additional pieces of information on a specific firm allows more accurate estimates to be made.

The third option is to check all of the information used with local officials. Each variable can be adjusted to reflect unusual circumstances. Since the model is computerized it is easy to recalculate the results once these changes are known. Naturally, the third option provides the most accurate projections and the best understanding of the probable impacts of a new firm.

Typical or specific firm options usually take 2 to 3 weeks to complete. If conducted through the Cooperative Extension Service there is no charge for the initial analysis for either of the first two options. Additional computer runs can typically be made for less than $5 per run. Cost estimates for in-depth case studies are developed on an individual basis.

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